

U.S. Serial No. 09/521,072  
Reply to Office Action of April 30, 2007  
Family Number: P2000J016

### III. REMARKS

The present Amendment and Response is filed in response to the Office Action mailed April 30, 2007. Claims 1-7 are currently pending.

The Applicants offer the following remarks for consideration in view of the Examiner's claim rejections for unobviousness. Reconsideration of the patentability of the instant application is respectfully requested in view of these remarks.

#### A. Claim Rejections under 35 USC 103(a)

Claims 1-7 have been rejected as allegedly being unpatentable under 35 U.S.C. 103 (a) over Johnson et al. (U.S. Patent No. 5,543,625) (hereinafter "Johnson"). The Applicants respectfully disagree.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). To establish prima facie obviousness of a claimed invention, three basic criteria must be met. *See* MPEP § 2143. First, the prior art reference(s) must teach or suggest all of the claim limitations. *See id.* Second, there must be some suggestion or motivation in the references themselves to modify the reference or to combine reference teachings. *See id.* This burden is not discharged by a conclusory statement unsupported by prior art of record. Third, there must be a reasonable expectation of success. *See id.* The teaching or suggestion to arrive at the claimed invention, and the reasonable expectation of success, must be found in the prior art, and not based on Applicants' disclosure (*see*, MPEP § 2143 and *In re Vaack*, 20 USPQ2d 1438 (Fed. Cir. 1991)). The particular components of the claimed invention may not be taken and used as a blueprint for reconstructing the prior art by simply picking-and-choosing different elements or aspects of the prior art to arrive at the claimed invention (*see*, *Smithkline Diagnostics v. Helena Laboratories Corp.*, 8 USPQ2d 1468, 1475 (Fed. Cir. 1988)). In addition, if the proposed modification to the prior art would render the prior art invention being modified unsatisfactory for its intended purpose, there can be no suggestion or motivation to make the proposed modification (*In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984)).

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Claim 1 of the instant invention is directed to a method for measuring carbon numbers and molecular weights of isoparaffins using a field ionization mass spectrometer that comprises reducing an emitter current in the field ionization mass spectrometer below a threshold value to substantially reduce fragmentation of isoparaffin molecular ions. As disclosed in the third paragraph of the background of the invention of the instant disclosure, conventional field ionization techniques produce extensive fragmentation of isoparaffins, which results in the absence of molecular or pseudo-molecular ions in the mass spectra.

Johnson is directed to a filament assembly for use in field emission mass spectrometry. In field emission spectrometry, electrons are emitted from a filament and then accelerated with a magnetic field. More specifically, a change in the desired electron energy via a change in the filament bias changes the electric gradient at the filament, which in the presence of a fixed magnetic field, changes the electron trajectories and the overall efficiency of electron delivery to the ionization region (see col. 2, lines 18-23). The electrons then collide with sample molecules in an ionization chamber and cause them to ionize. (see col. 4, lines 53-56). The positively charged ionized molecules are then detected with a mass analyzer (see col. 3, lines 51-56).

Johnson does not disclose or suggest each and every element of claim 1. Johnson does not teach or suggest a method for measuring carbon numbers and molecular weights of isoparaffins using a field ionization mass spectrometer, wherein the emitter current is reduced to below a threshold value to substantially reduce fragmentation of isoparaffin molecular ions as required by claim 1. In contrast, Johnson teaches the use of field emission mass spectrometry where the ionization process may cause the molecules to fragment due to electron impact (see col. 1, lines 63-65) contrary to the teachings of the instant invention. In field ionization mass spectrometry, ionization occurs on the emitter (filament) itself, and hence "electron tunneling" occurs from the molecule to the emitter. When the emitter current is reduced below a threshold value, the electrons have a reduced velocity and therefore tend not to fragment isoparaffin molecules. As distinguished from conventional field emission mass spectrometry, the field ionization mass spectrometry method of the instant invention does not result in a collision between a high velocity electron and a molecule, and hence the technique is inherently softer, which reduces the propensity for fragmentation of molecular ions.

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In view of the foregoing remarks, applicants contend that claim 1 is patentable over Johnson and should be allowed. Correspondingly, claims 2-7, which depend from claim 1, are patentable in view of at least the dependency. Accordingly, the applicants respectfully request that the Examiner reconsider and withdraw the 35 U.S.C. 103 (a) rejection of claims 1-7.

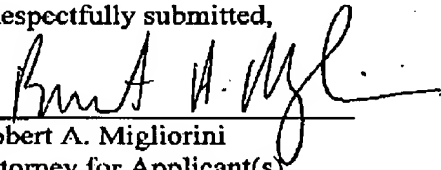
#### IV. CONCLUSION

For all of the foregoing reasons, it is respectfully submitted that all of the pending claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance of all pending claims is respectfully requested. The Commissioner is hereby authorized to charge \$450 payment for a 2-month extension for response to an Office Action pursuant to 37 C.F.R. 1.17 (a)(2). No additional fees are believed to be required with this Amendment, however if any other fee is required, or otherwise necessary to cover any deficiency in fees already paid, authorization is hereby given to charge Deposit Account Number 05-1330.

If there should be any questions in connection with this request, the undersigned may be contacted at the number below.

Date: 9/18/07

Respectfully submitted,

  
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☒ Pursuant to 37 CFR 1.34(a)

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